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**Synthesis, characterization and antibacterial activity of silver nanoparticles using *Acacia senegal* leaf extract****Edwina Uzunugbe, Sixberth Mlowe, Neerish Revaprasadu and Abidemi Paul Kappo**

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Silver nanoparticles have gained considerable attention because of their unique properties and applications in medicine, cosmetics, water purification, food packaging and as antibacterial agents as well as in so many other everyday life applications. In this present work, silver nanoparticles were synthesized using aqueous leaf extracts of *Acacia senegal*. UV-Vis absorption spectrum showed absorption maxima at about 467nm. Transmission Electron Microscopy (TEM) studies showed formation of close to spherical nanoparticles with particle sizes ranging from 10nm to 19nm, while X-ray Diffraction studies (XRD) confirmed formation of crystalline cubic structure of silver nanoparticles. Fourier Transform Infrared (FTIR) spectroscopy indicated some functional groups revealing interaction of silver nanoparticles and the leaf extract. More so, the antimicrobial activity of the silver nanoparticles was explored on some strains of both Gram negative and positive bacteria and it was found to exhibit significant antibacterial activities. The results showed that the green synthesis of silver nanoparticles is eco-friendly, easy, cost-effective, fast, are not harmful and the AgNPs obtained are very potent against some strains of Gram negative and positive organisms.

**Biography**

Edwina Uzunugbe has received her Bachelor's and Master's degree in Biochemistry and is presently a PhD student at the Biotechnology and Structural Biochemistry (BSB) Group, Department of Biochemistry and Microbiology, University of Zululand, South Africa. Her current research work focuses on green synthesis of some metal nanoparticles for bio-imaging and other biomedical applications. Her areas of research interests include molecular biology and green nano-biotechnology. She is a Member of the South African Society of Biochemistry and Molecular Biology (SASBMB), Nigerian Society of Biochemistry and Molecular Biology (NSBMB) and the Nigerian Society of Experimental Biology (NISEB).

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